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Food and Agriculture
Organization of the
United Nations



World Food
Programme



Sweden
Sverige

Regional Forum on Accelerating Food Systems Transformation in the Arab Region

Amman, Jordan, 30-31 October, 2024

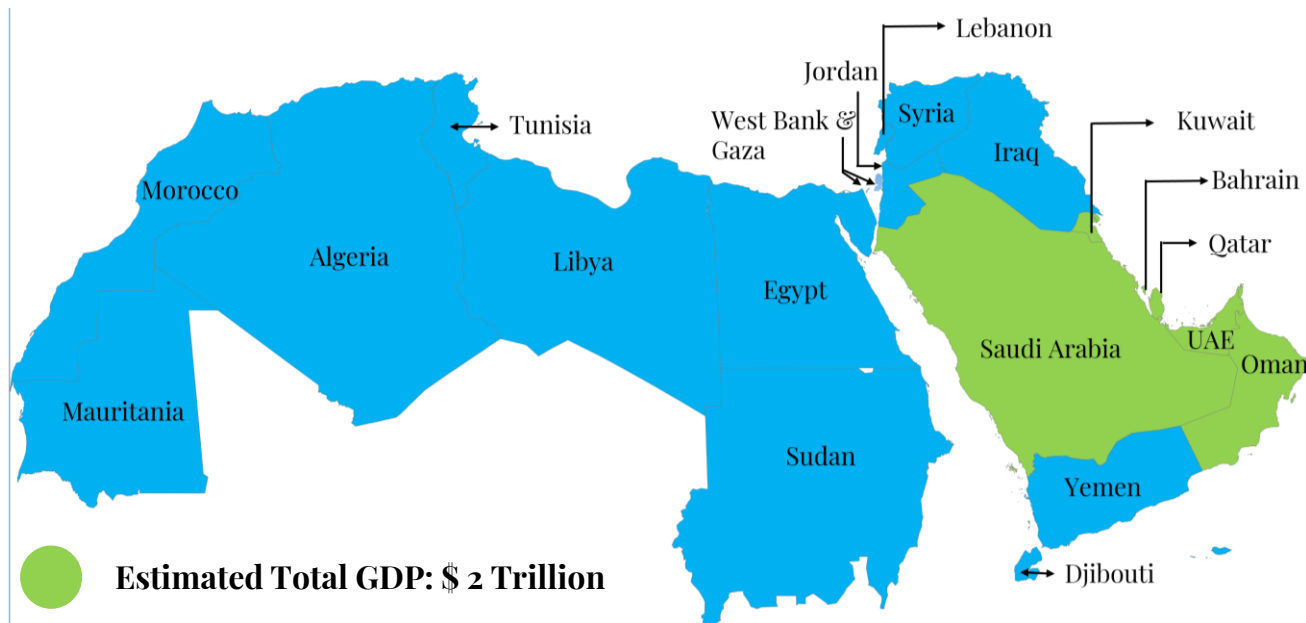


Session IV: Innovative Approaches for Accelerating Food Systems Transformation

Cultivating Innovation through Joint R&D and Technology Transfer as Catalysts for Regional Food Security

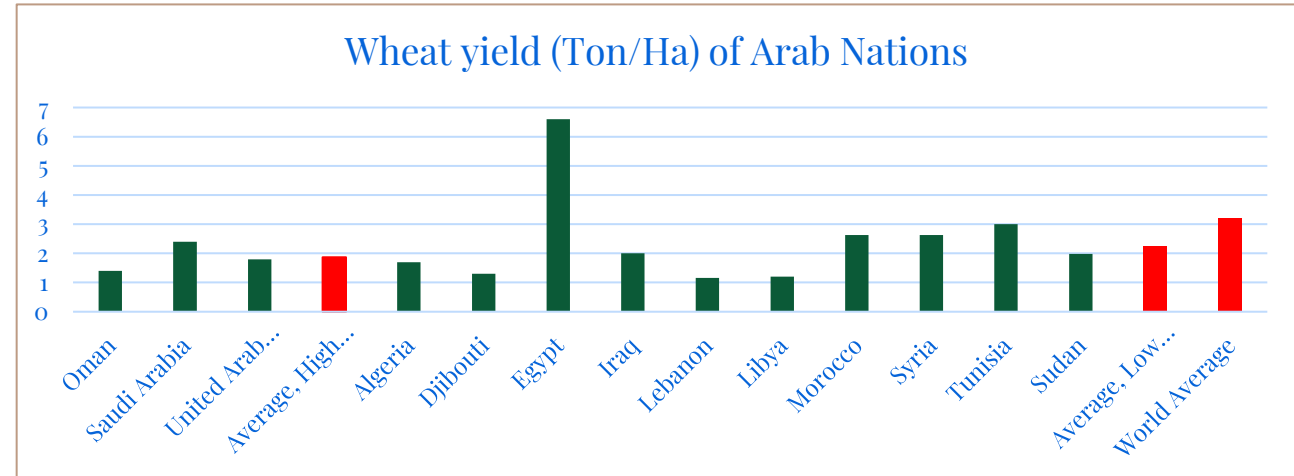
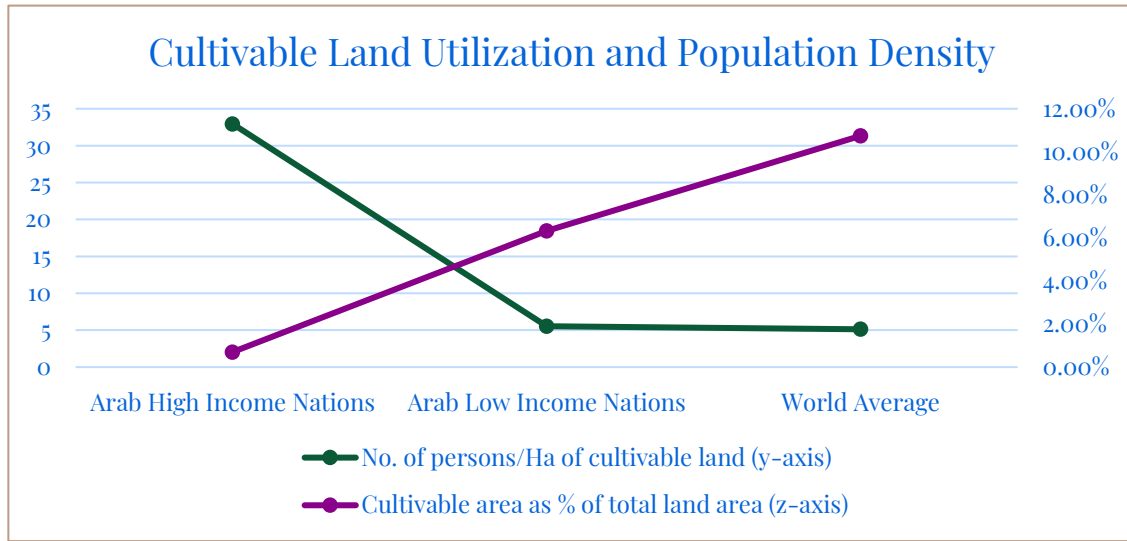
Muddassir Shafique/ Agribusiness Lead, Upstream, MCT/ International Finance Corporation

Unlocking Arab Agriculture: Low-Income Countries Hold Key to Growth



Estimated Total GDP: \$ 2 Trillion

Estimated Total GDP: \$ 600 Billion



Arab Agricultural Productivity Crisis: A Barrier to Food Security

Major Issues



- 1. Water is scarce**
 - 70% of land: arid/semi-arid
 - Agriculture consumes 85% of water resources
 - 14/20 most water-stressed countries by 2025 will be located in Middle East & North Africa



- 2. Culturable Land is scarce**
 - Only 5% of total land is cultivable, which limits local food production capacity

Impacts on Food Security



Reliance on Food Imports

- The region imports 50% of its food requirements (\$132.5 Billion food imports in 2023)
- High dependence on global supply chains makes the region vulnerable to disruptions (Average year-on-year food inflation between March and December 2022 was 29% in the MENA region mainly because of Russia-Ukraine war and local political conflicts)



Regional Collaboration in R&D Can Enhance Middle East Agriculture

R&D and Technology Transfer in Agriculture:



- Agricultural research and development (R&D) in the MENA region receives **less than 1% of the global agricultural research budget**. This underinvestment hampers innovation in food production technologies (International Food Policy Research Institute (IFPRI). (2021). *Agricultural R&D in the Middle East and North Africa.*)



- Studies have shown that technology transfer in agriculture, particularly in irrigation technologies and precision farming, can **improve yields by 20-30%** in water-scarce regions (Food and Agriculture Organization (FAO). (2022). *The State of Food and Agriculture 2022: Leveraging Technology for Agriculture.*)

Regional R&D and Collaboration



- Regional R&D and collaboration in agriculture have the **potential to boost agricultural productivity by 10-15%**, according to a study by the Economic and Social Commission for Western Asia (ESCWA). This can include advances in drought-resistant crops, water-efficient technologies, and integrated food supply chains.



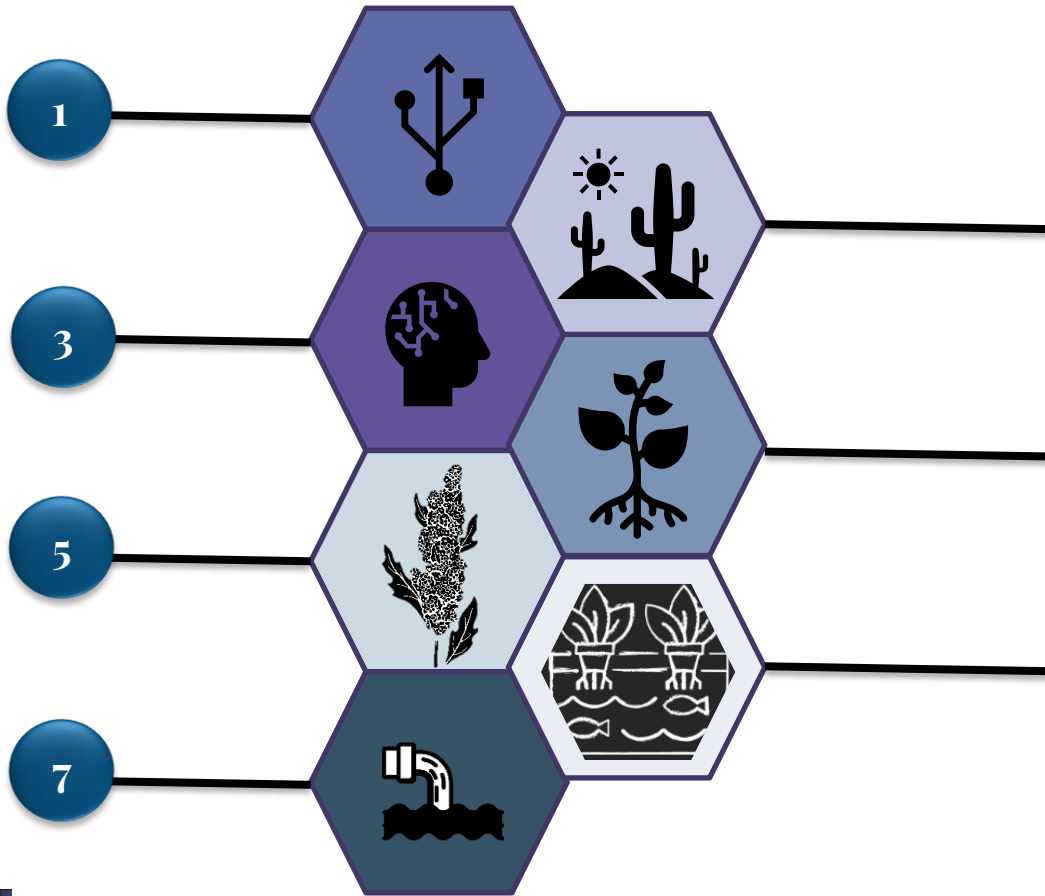
Innovative and Collaborative R&D Solutions for Sustainable Agriculture in Arid Regions

Water-Efficient Technologies:
subsurface drip irrigation, or sensor-based soil moisture management, could improve WUE by 50%

Precision Agriculture and AI Tools:
Developing AI-driven digital platforms to enhance farmer capacity and precision agriculture

Alternative Crop Exploration:
Focusing on non-traditional crops, like quinoa, which is drought-resistant and nutritionally rich

Wastewater Treatment and Reuse:
Affordable and efficient systems to unlock alternative water sources for agricultural irrigation



Desert Agriculture Techniques:

2 Using native plants to restore degraded soils or growing crops in sand enriched with biochar

Soil Microbiome Engineering:

4 By harnessing the power of beneficial microbes, Soil Microbiome Engineering can revitalize nutrient-poor desert soils, increasing agricultural productivity and resilience.

Hydroponics and Aquaponics:

6 Researching more cost-effective and region-specific hydroponic and aquaponic systems could increase fresh produce availability without heavy water use.



From Farm to Fork: IFC's Investment Products and Services across the Agribusiness and Forestry Value Chains

Our Interventions and Goals

Sub-Sectors



- Animal health/Nutrition
- Seeds
- Fertilizers
- Irrigation
- Crop Protection
- Machinery



- Animal Protein
- Horticulture
- Timberland
- Staple crops
- Cash crops



- Pulp
- Primary wood products
- Ingredients
- Crushing
- Milling
- Commodity traders



- Paper, tissue, packaging
- Processed wood products
- Processed foods and beverages
- Meat & dairy products



- Infrastructure and logistics
- Food wholesalers
- Groceries
- Food retailers
- Food service
- Meat & dairy products

Upstream/Investment/Advisory Engagements

Environmental and Social Standards

IFC Priority Areas

1

Enhance Food & Nutrition Security

Interventions along the value chain that enable efficient and resilient food production and delivery

2

Advance Growth and Value Addition, Prioritizing Inclusive Business Models

Leveraging the central role of agribusiness and forestry in developing economies by supporting rural livelihoods and building inclusive value chains

3

Make Climate and Sustainability Key Business Drivers

Emphasis on climate impacts and sustainable supply chain business models



Case Study 1: Investment in Hayel Saeed Anam Foods (HSA Foods)

Client Needs



- Long-term financing for operational stability.
- Advance payment solutions for raw material imports.
- Foreign currency access for seamless trade.

Project Outcomes

Food Security & Employment



- Addressed **Yemen's food security** challenges
- Safeguarded **5,000+ jobs**, potential for growth
- Ensured supply of quality, fortified foodstuffs

IFC Approach



Financing Package: 5-year loan of up to \$55M for operational stability



Risk Mitigation: First-loss guarantee from the IDA Private Sector Window (PSW),



Operational Continuity: Ensured continuous production & distribution of essential food items in Yemen, mainly sugar, flour fortification and higher-quality ingredients for dairy



Gender inclusion

- IFC advisory services for **inclusive workforce**
- 24% increase in female employees targeted
- Empowering women in Yemen's labor force

Investment & Financial Support



- **\$75M investment facility** for local food production
- Supported service delivery, **institutional preservation**
- Building **resilience** in Yemen

The HSA Project showcases IFC's advisory support in conflict zones like Yemen, promoting environmental, social standards and advancing gender and resource efficiency through advisory support



Case Study 2: Tiryaki Iraq Project

Client Needs



- Funding, including Long-term Financing
- Environmental and Social Risks Management
- Support local poultry production through food security
- Mobilizing additional resources, including B Loans and Parallel Loans.

Project Outcomes

Improved Food Security



- Increase supply and availability of corn and soybean meal for local poultry feed producers.

Economic Diversification



- Diversify Iraq's economy by producing soybean meal and exporting soybean oil

Global Food Supply Resilience



- Enhance resilience in the global food supply market.

Reduction in Post-Harvest Food Losses



- Reduce food losses through improved storage facilities.

IFC Approach



Long-term Financing package: Providing scarce long-term funding with an eight-year tenor



Resource Mobilization: Mobilizing additional resources, including a B Loan of up to US\$31.5 million and a Parallel Loan of up to US\$15 million.

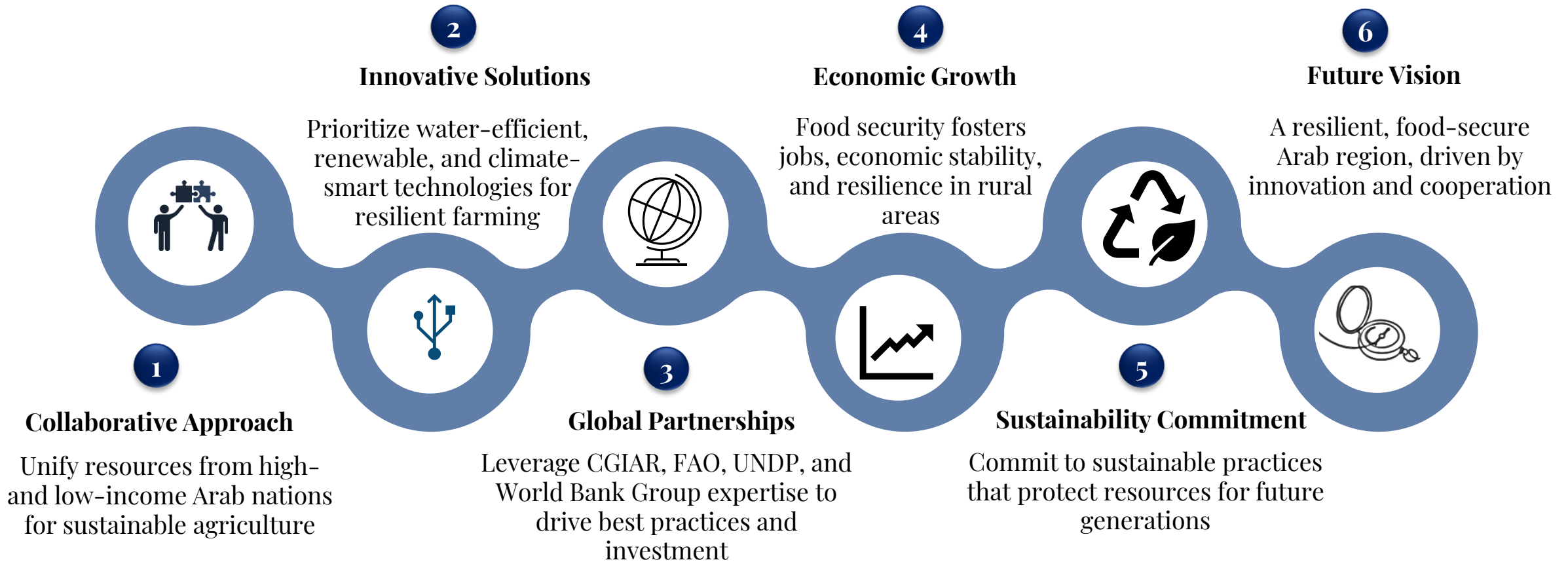


Standard Setting: Supporting the company in implementing good E&S management practices

The Tiryaki Iraq Project exemplifies a strong South-South relationship, with a leading Turkish agribusiness investing in Iraq to enhance food security, diversify the economy, and bolster regional agricultural resilience.



Key Takeaways



High-income Arab nations provide capital, low-income nations contribute land and human resources, while CGIAR, FAO, UNDP, and IFC—through private sector investments and PPPs—add expertise and financial resources, creating a powerful R&D ecosystem for sustainable agriculture across the region.

The End

